UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,419	05/24/2001	William D. Norcott	50277-1005	9399

7590 07/30/2007
DITTHAVONG & CARLSON, P.C.
10507 Braddock Rd Suite A
Fairfax, VA 22032

EXAMINER
SAEED, USMAAN

ART UNIT	PAPER NUMBER
2166	

MAIL DATE	DELIVERY MODE
07/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	09/863,419	NORCOTT, WILLIAM D.
	Examiner	**Art Unit**	
	Usmaan Saeed	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 March 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-10* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

3/22/2006 has been entered.

Double Patenting

2.   In response to the arguments and amendments filed on 3/22/2006, the double

patenting rejection has been withdrawn.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

Claims 1, 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over

William D. Norcott ('**Norcott**' hereinafter), USP, 5,848,405 in view of **Rauer et al.**

('**Rauer**' hereinafter), USP, 6,161,103.

With respect to claim 1,

Norcott teaches **a method for change data capture** (see col. 1, lines 64 to col.

2, line 1), **comprising the steps of:**

executing a database statement (see col. 6, lines 54-55) **to copying from a**

recovery log (new data for refresh processing purposes, the server process deletes the

ROWID range from the ROWID range table. Updates a redo log to indicate the changes

made to the range table ensures that identification of the new data can be recovered in

the event of database crash, see col. 6, lines 23-31 and col. 5, lines 59-61, **Norcott**),

that contains change data for all transactions performed to a source object

(The redo log 620 records changes made by all transactions within the database, See

col. 5, Lines 56-57, **Norcott**,),

change data for at least one transaction that has been performed to the

source object (updates a redo log to indicate the changes made to the range table, see

col. 5, lines 59-60, **Norcott**); **and**

storing the change data for the at least one transaction that has been

performed to a source object in a database object, other than the source object

(the start and end ROWID values are database objects and stored in step 406, see col.

5, lines 57-67, Fig. 4, **Norcott** and a method and apparatus for identifying new data

stored in data warehouses by storing the new data records at contiguous storage

locations, and storing range data that specifies the range of the contiguous storage

locations. New data is identified in the database by storing the start location and the

end location of the contiguous range of data location, enabling server processes to

access the new data records based on the stored range data, without needing to

identify the new data records on a row-by-row basis, see Abstract **Norcott**),

database object having at least one control column (The first table entry

specifies an extent having data records with contiguous storage location identifiers

having a range within the low ROWID equal to A up to and including the high ROWID

equal to C. The second, third, and fourth table entries specify extents 202 having data

records at the contiguous ranges of ROWIDs D-F, G-J, and K-M, respectively. If

desired, the table column includes a flag ("&") appended to the table name to signify

that the next row entry specifies the location of the next extent storing the new data, see

Col 6 lines 64-67 and Col 7, Lines 1-6, **Norcott**),

wherein the database object includes a change table (the server process updates a redo log to indicate the changes made to the range table, see col. 5, lines 54-55, **Norcott**).

Norcott does not explicitly indicate the claimed **"statement to copy"**.

However, **Rauer** discloses **statement to copy** (the connector is a grouping mechanism for extraction statements and a specification for input and output data stores, see col. 19, lines 22-24, **Rauer**). Examiner interprets extraction as copying.

Further, **Rauer** teaches **database object having at least one control column** (The system also includes additional columns for foreign key tracking, source system key mapping, time and date tracking, see Col 4, Lines 58-62 **Rauer**). Examiner interprets these columns as control columns in view of applicant figure 2.

It would have been obvious to one ordinary skill in the data processing art, at the time of the present invention, to combine the teachings of the cited references because the statement to extract/copy of **Rauer's** teachings would have allowed to **Norcott's** system to create databases, loading and accessing data in the databases as suggested by **Rauer**, see col. 1, lines 46-47. Further, statement to extract as taught by **Rauer** improves to perform set of commands to execute the creation of the aggregate tables (see col. 3, lines 19-20, **Rauer**).

Claim 6 is essentially the same as claim 1, except it recites the claimed invention as a computer readable medium bearing instructions and is rejected for the same reasons as applied hereinabove.

As to claim 3,

Norcott teaches **renaming a column heading for a source column of the**

source object and providing the renamed column heading for the source column

as a column as a column heading in a change column of the database object (all

database records belonging to the table names "sales" and having ROWIDs in the

range between x and y (inclusive) are identified as new records having just been

inserted into the database (e.g., table portion 610b) see, Col 6, Lines 44-48, **Norcott**).

(The first table entry specifies an extent having data records with contiguous storage

location identifiers having a range within the low ROWID equal to A up to and including

the high ROWID equal to C. The second, third, and fourth table entries specify extents

202 having data records at the contiguous ranges of ROWIDs D-F, G-J, and K-M,

respectively. If desired, the table column includes a flag ("&") appended to the table

name to signify that the next row entry specifies the location of the next extent storing

the new data, see Col 6 lines 64-67 and Col 7, Lines 1-6, **Norcott**),

Claims 9 is same as claim 3 and is rejected for the same reasons as applied

hereinabove.

As to claim 4,

Norcott teaches **generating the database statement to store the change data**

in the database object (If the new data records are stored entirely within a single group

of data records having a contiguous sequence of ROWIDs, then the summary refresh

process is completed after the server process deletes the ROWID range from the

ROWID range table, see col. 6, lines 27-32 and lines 50-58, **Norcott**).

As to claim 5,

Norcott teaches **shipping change data from the recovery log of an on-line**

transaction processing (OLTP) system (The source of the data is an online

transaction processing (OLTP) database and OLTP databases provide a mechanism for

exporting [shipping] data from the database into a static file, see col. 4, lines 20-25,

Norcott).

Norcott does not explicitly indicate the claimed **"staging system"**.

However, **Rauer** discloses claimed **staging system** (SQL statements are issued to the

source system and the results are loaded into the staging tables. The staging tables had

been created as a result of block. Once the staging tables have been loaded, the data

can then be moved into the datamart, see col. 10, lines 49-53, **Rauer**).

It would have been obvious to one ordinary skill in the data processing art, at the

time of the present invention, to combine the teachings of the cited references because

the staging system of **Rauer's** teachings would have allowed to **Norcott's** system to

create databases, loading and accessing data in the databases as suggested by **Rauer**,

see col. 1, lines 46-47. Further, staging system as taught by **Rauer** improves to perform

set of commands to execute the creation of the aggregate tables (see col. 3, lines 19-

20, **Rauer**).

With respect to claim 7,

Norcott teaches **a method of change data capture** (see col. 1, lines 64 to col.

2, line 1), **comprising the steps of:**

shipping change data for at least one transaction that has been performed

on an on-line transaction processing (OLTP) system from a recovery log that

contains change data for all transactions performed to an on-line transaction

processing (OLTP) system (Updates a redo log to indicate the changes made to the

range table ensures that identification of the new data can be recovered in the event of

database crash, see col. 5, lines 59-61, **Norcott**), (The redo log 620 records changes

made by all transactions within the database, See col. 5, Lines 56-57, **Norcott**,) and

(The source of the data is an online transaction processing (OLTP) database and OLTP

databases provide a mechanism for exporting [shipping] data from the database into a

static file, see col. 4, lines 20-25, **Norcott**); and

Norcott teaches **performing the steps** (see col. 5, lines 59-61) of: **copying**

change data from a recovery log (new data for refresh processing purposes, the

server process deletes [extract] the ROWID range from the ROWID range table.

Updates a redo log to indicate the changes made to the range table ensures that

identification of the new data can be recovered in the event of database crash, see col.

6, lines 29-31 and col. 5, lines 59-61, **Norcott**); and

storing the change data from the recovery log in a database object (the start

and end ROWID values are database objects and stored in step 406, see col. 5, lines

58-66, Fig. 4, **Norcott**), **said change data indicating at least one modification that has been performed to a source object** (updates a redo log to indicate the changes made to the range table, see col. 5, lines 59-60, **Norcott**).

database object having at least one control column (The first table entry specifies an extent having data records with contiguous storage location identifiers having a range within the low ROWID equal to A up to and including the high ROWID equal to C. The second, third, and fourth table entries specify extents 202 having data records at the contiguous ranges of ROWIDs D-F, G-J, and K-M, respectively. If desired, the table column includes a flag ("&") appended to the table name to signify that the next row entry specifies the location of the next extent storing the new data, see Col 6 lines 64-67 and Col 7, Lines 1-6, **Norcott**),

Norcott does not explicitly indicate the claimed **"staging system" and "statement to copy"**.

However, **Rauer** discloses claimed **staging system** (SQL statements are issued to the source system and the results are loaded into the staging tables. The staging tables had been created as a result of block. Once the staging tables have been loaded, the data can then be moved into the datamart, see Col 10, lines 49-53, **Rauer**) and (the connector is a grouping mechanism for extraction statements and a specification for input and output data stores, see col. 19, lines 22-24, **Rauer**).

Further, **Rauer** teaches **database object having at least one control column** (The system also includes additional columns for foreign key tracking, source system

key mapping, time and date tracking, see Col 4, Lines 58-62 **Rauer**). Examiner

interprets these columns as control columns in view of applicant figure 2.

It would have been obvious to one ordinary skill in the data processing art, at the

time of the present invention, to combine the teachings of the cited references because

the staging system of **Rauer's** teachings would have allowed to **Norcott's** system to

create databases, loading and accessing data in the databases as suggested by **Rauer**,

see col. 1, lines 46-47. Further, staging system as taught by **Rauer** improves to perform

set of commands to execute the creation of the aggregate tables (see col. 3, lines 19-

20, **Rauer**).

With respect to claim 8,

Norcott teaches **a method of change data capture** (see col. 1, lines 64 to col.

2, line 1), **comprising the steps of:**

shipping change data for at least one transaction that has been performed

on an on-line transaction processing (OLTP) system from a recovery log that

contains change data for all transactions performed to the on-line transaction

processing (OLTP) system (Updates a redo log to indicate the changes made to the

range table ensures that identification of the new data can be recovered in the event of

database crash, see col. 5, lines 59-61, **Norcott**), (The redo log 620 records changes

made by all transactions within the database, See col. 5, Lines 56-57, **Norcott,**) and

(The source of the data is an online transaction processing (OLTP) database and OLTP

databases provide a mechanism for exporting [shipping] data from the database into a

static file, see col. 4, lines 20-25, **Norcott**); and

Norcott teaches **performing** (see col. 1, lines 6-8) **the steps of: registering the**

recovery log with a log viewer (Updates a redo logto indicate the changes made to

the range table ensures that identification of the new data can be recovered in the event

of database crash, see col. 5, lines 59-61, **Norcott**);

generating a SQL statement to extract the change data from the recovery

log (After all the new records have been added to the "sales" table it is possible to

identify the new records by using the ROWID range table, for example by processing

the SQL select statement:

SELECT*FROM sales

WHERE (ROWID>=X) AND (ROWID&lt=Y)

The summary refresh process can access the new data by processing such a select

statement after obtaining the values of x and y from the ROWID range table, see col. 6,

lines 50-58, **Norcott**); and

executing the SQL statement (see col. 6, lines 50-55, **Norcott**), **thereby**

extracting the change data from the recovery log via the log viewer (new data for

refresh processing purposes, the server process deletes [extract] the ROWID range

from the ROWID range table. Updates a redo log to indicate the changes made to the

range table ensures that identification of the new data can be recovered in the event of

database crash, see col. 6, lines 29-31 and col. 5, lines 59-61, **Norcott**) **and storing**

the change data from the recovery log in a change table (the start and end ROWID

values are database objects and stored in step 406, see col. 5, lines 58-66, Fig. 4,

Norcott), said change data indicating at least one modification that has been

performed to a source object (updates a redo log to indicate the changes made to the

range table, see col. 5, lines 59-60, **Norcott**).

Norcott does not explicitly indicate the claimed **"staging system" and**

"statement to extract".

Rauer discloses claimed **staging system** (SQL statements are issued to the

source system and the results are loaded into the staging tables. The staging tables had

been created as a result of block. Once the staging tables have been loaded, the data

can then be moved into the datamart, see col. 10, lines 49-53, **Rauer**).

Rauer discloses claimed **statement to extract** (the connector is a grouping

mechanism for extraction statements and a specification for input and output data

stores, see col. 19, lines 22-24, **Rauer**).

It would have been obvious to one ordinary skill in the data processing art, at the

time of the present invention, to combine the teachings of the cited references because

the staging system of **Rauer's** teachings would have allowed to **Norcott's** system to

create databases, loading and accessing data in the databases as suggested by **Rauer**,

see col. 1, lines 46-47. Further, staging system as taught by **Rauer** improves to perform

set of commands to execute the creation of the aggregate tables (see col. 3, lines 19-

20, **Rauer**).

As to claim 10,

Norcott teaches **wherein the on-line transaction processing (OLTP) system are provided by different database vendors employing a different, incompatible internal implementation** (The source of the data is an online transaction processing (OLTP) database and OLTP databases provide a mechanism for exporting [shipping] data from the database into a static file. The static file then loaded by the server process into the database table and enable the database to processes for update, see col. 4, lines 20- 30, **Norcott**).

Response to Arguments

4.   Applicant's arguments filed 3/22/2006 have been fully considered but they are not persuasive.

See above rejections for the arguments. In these arguments applicant relies on the amended claims and not the original ones.

Claims must be given the broadest reasonable interpretation during examination and limitations appearing in the specification but not recited in the claim are not read into the claim (See M.P.E.P. 2111 [R-I]).

Contact Information

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usmaan Saeed whose telephone number is (571)272-4046. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571)272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

<div style="margin-left:50%">

Usmaan Saeed
Patent Examiner
Art Unit: 2166

US
July 12, 2007

</div>

Leslie Wong
Primary Examiner

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER